Original

Before the

FEDERAL COMMUNICATIONS COMMISSION

Washington, D.C. 20554

In the Matter of	)	ET-Docket No. 93-62
Guidelines for Evaluating the Environmental	)	and Report and Order FCC 96-326
Effects of Radiofrequency Radiation	)	

To: The Commission

(1) Reply to Opposition of Cellular Phone Taskforce to requests of Paging Network, Inc. to further reduce public protection from RF by delaying implementation of evaluation criteria and reducing means of assuring exposure criteria are met, and

(2) Reply to Comments of David Fichtenberg to support petition of Cellular Phone Taskforce, and

(3) Reply to Opposition of David Fichtenberg to some requests in Petition of Reconsideration of Ameritech Mobile Communications, Inc. to preempt currently permitted state regulation and tort liability for RF exposure, and

(4) Reply to Opposition of David Fichtenberg to request of Electromagnetic Energy Association to preempt non-personal wireless services and to establish the 1992 ANSI/IEEE standard which U.S. EPA reports has 'serious flaws'.

Introduction: In accordance with 47 CFR Part 1 §§ 1.4(b)(1) and 1.429(g) herein replies to comments to petitions for reconsideration filed in the above docket are hereby given, and are being filed in a timely manner on or before October 18, 1996 which is within the 10 day period for replying to comments filed by October 8, 1996. The above oppositions shall be referred to by number, e.g. #1 represents the opposition of the Cellular Phone Taskforce described above.

1. Support is given to comments in #1 regarding its opposition to parts of the petition for reconsideration of Paging Network, Inc. concerning:

(1) Opposition to the categorical exemption sought by Paging Network, Inc.[Taskforce at 1,2] As transmission antenna, with their horizontal beam typically being most powerful, are placed at

low heights on roof-tops, bill boards, and street lights or signs, and are co-located near each other, the likelihood of exceeding exposure limits increases and requested further categorical exemptions not provided for in the Commission's Report and Order FCC 96-326 ("R&O") should not be given. As noted in #2 at 15,16 the Commission's categorical exemptions in the R&O are inadequate because they allow potentially out-of-compliance conditions. Moreover, as noted in #1 at 1, paging transmitters, as well as other telecommunications transmitters, may reach 3500 Watts ERP; hence were such antenna near buildings of similar height as such antenna, then out-of-compliance conditions may occur. Hence, categorical exemptions should not be allowed for any wireless services, which is properly according to the Commission rules.

(2) Opposition to raising the 'trigger' from 1% to 10% or higher for meeting area-wide exposure compliance obligations. The Cellular Phone Taskforce is correct that, *"In view of the current and expected proliferation of radio frequency transmitters of all categories, a 10% trigger for area-wide compliance obligations would potentially leave a great many areas effectively excluded from regulation... If no facility in an area passed the 10% threshold, that area would not be brought into compliance."* [#1 at 2 and 3] Likewise, the Commission should not grant similar increased 'trigger' levels which may be requested in other petitions for reconsideration.

Furthermore, allowing such exemptions may encourage operators with exposures below the 'trigger' to increase exposure. For example, If six operators at a site operated at 5% of the exposure limit, and two operators, who were the original ones there, operated at 34% of the exposure limit, then exposures would be 98% of the limit. However, if the six '5%' operators increased exposures to 9% of the limit, then the site would be 22% over the limit; yet those causing the increasing would be exempted from adjustments. Hence, such high 'trigger' levels may encourage increased exposures by those still below the trigger. Accordingly support is given for opposing petitions of Paging Network, Inc. and any other companies making similar requests.

(3) Opposition to "delaying implementation of the new regulations past January 1, 1997" for an additional year or other time period. Since such above noted low height antennas are proliferating and are among those co-locating - thereby increasing exposures at a site, delay in implementing the new rules of the Commission only further puts the public health at risk. (i) Operators have

known for over three years, since April 1993 when the Commission proposed more restrictive limits similar to those adopted, the of the intent of the Commission to adopt new and more restrictive limits, (ii) and have been aware that their transmitters are being placed at much lower heights than historically, and thus to expect such low height transmitters to be at greater risk of exceeding the more restrictive exposure criteria (since low height transmitters are more likely to cause greater exposure at the same amount of output power), and (iii) knoe that co-location is increasing the risk of out-of-compliance conditions (as noted above).

Because operators did not prepare is not a reason to delay implementation, Moreover, as shown in #2 at pages 4 through 14, there is strong evidence of adverse affects at low levels of exposure, and consequently, that the Commission's new rules with more restrictive limits will be more protective. Hence delay of implementation is not in the public interest.

Furthermore, the Commission may have misunderstood or overlooked the evidence in the record which report adverse effects below the hazard threshold from which the Commission's exposure criteria are derived, and hence its previous limits, as well as current limits do not provide adequate protection from all mechanisms. Hence, delay in implementing the more restrictive standards has an impact on public health risks and should not be viewed as just providing a greater measure of safety. Thus, delay is not in the public interest.

Furthermore, the opposition of #1 to delaying implementation must be understood as opposition to delaying implementation whereby all operators are held to the new criteria, regardless of when they may have received a license. Thus, the Commission must clarify that the above *"implementation of regulations"* applies to all companies, regardless of when they were licensed, for the Commission has explicitly and correctly stated that it intends for *"applicants and stations to come into compliance with the new requirements,"*[R&O 112].

The Commission must join in opposing any requests in petitions for reconsideration to allow "grandfathering" in of facilities licensed under less restrictive criteria. The necessity of all stations meeting the new exposure criteria is due in part to the adverse effects which have been documented to occur below the hazard threshold from which the Commission's exposure criteria are derived, and some adverse effects are reported to even occur below the Commission's

exposure limits [see response of David Fichtenberg to AT&T, U.S.West, and Department of Defense, and included exhibit of EPA letter of N.Hankin of Oct. 8, 1996, and see David Fichtenberg response to Cellular Phone Taskforce in #2 at 4 through 15].

Thus, the Commission should clarify that while out of administrative necessity the Commission ruled it will require as of January 1, 1997, all new and renewal license applications to meet the new guidelines, and not perform a general re-licensing of all licensees, that nevertheless all licensees are expected to meet the new exposure guidelines in the public interest, and should a site need relicensing, for voluntary or required reasons, then that site is expected to meet the new criteria - as are all sites, whether being reviewed or not.

2. Support is given to the comments in #2 responding to the petition for reconsideration of the Cellular Phone Taskforce, and include support for, but not limited to, finding:

(1) The Commission's limits are inadequate for providing protection from documented adverse effects/behavioral disruption documented below the hazard threshold from which the Commission's exposure limits are derived, and such limits need to be made more restrictive as proposed at #2 at 8 through 15. Note that evidence that the Commission's exposure criteria are inadequate is found among the 120 papers in the Final List of Papers Reviewed for the IEEE C95.1-1991 standard which the Commission adopted during the transition period for certain Personal Communications Services licensees. [see #2 at 8 through 13, and #4 at 3 through 6]. Also note that such papers being below the IEEE C95.1-1991 hazard threshold indicates a serious internal inconsistency of the IEEE C95.1-1991standard, since it adopted a hazard threshold greater than that indicated by its own papers used to determine such hazard threshold.

(i) Since these papers are acknowledged by IEEE and by the Commission (through adopting this standard) as being appropriate for standard setting, the Commission must re-evaluate its exposure criteria, ask for an evaluation of limits indicated by #2 at 8 through 15 by the federal health agencies, and set new more protective exposure criteria as given in #2 at 8 through 15. Also, the Commission should acknowledge that the U.S. Environmental Protection Agency ("EPA") has identified studies at levels of exposure below the hazard threshold from which the Commission limits were derived, and that these studies include effects, such as cancer, and hence

the Commission cannot claim its current standard is protective of all mechanisms [see EPA letter to the Commission of Nov. 9, 1993, and of N. Hankin to D. Fichtenberg of Oct. 8, 1996].

The federal health agencies need not be asked if an exposure limit being proposed in #2 is below levels at which there is assured protection from all mechanisms, but rather federal health agencies should be asked if the limits proposed in #2 at 8 though 15 are justified and reasonable, based on sound scientific studies - including studies from the Final List of Papers Reviewed For IEEE C95.1-1991, and may more appropriately protect the public health than the current Commission standard, even though it may be that protection from all mechanisms will occur at even more restrictive conditions.

(ii) Moreover, during a 'transition period' from August 1, 1996 through December 31, 1996, the Commission adopted the limits of the Institute of Electrical and Electronic Engineers ("IEEE") standard IEEE C95.1-1991 even though these limits, especially above 1500 MHz, are less restrictive than the Commission's exposure criteria prior to August 1, 1996, and is less restrictive than the Commission's proposed exposure criteria to be effective after the 'transition' period. Moreover, EPA has stated to the Commission that the IEEE C95.1-1991 standard has *"serious flaws that bring into question whether its proposed use is sufficiently protective of public health and safety,"* [see #2 at 12] and recommended against its adoption. Also, the Commission stated it would defer to the EPA recommendation and that during the 'transition' period *"our existing guidelines would continue to apply."* [R&O 112]. Hence, it is arbitrary, capricious, contrary to its own policies and decisions, and contrary to the public interest for the Commission to have adopted IEEE C95.1-1991 for certain Personal Communication Services services from August 1, 1999 though the time when the new rules become effective (now January 1, 1997) and any licenses granted under this standard should be reviewed to assure they also meet the criteria of the Commission's "existing guidelines" as the Commission stated in its decision [R&O 112].

(2) Supplement present and any future exposure limits by including the Commission rules that exposures should be kept *"as low as reasonably achievable"* as requested in #2 at 15. Similarly,

the Commission should note in its instructional bulletins (e.g. revision of Bulletin #65) and in informational material to the public the following clarifications:

(i) "A rule of the Commission is that exposures be kept 'as low as reasonably achievable' [as in #2 at 15]

(ii) "Other health effects may be associated with RF exposure and that exposure should be minimized to the extent possible." [National Institute of Occupational Safety and Health (NIOSH) as reported in #2 at 15]

(iii) "In view of our limited knowledge on thresholds for all biological effects, unnecessary exposure should be minimized." [International Radiation Protection Association (IRPA) as reported in #2 at 15]

(iv) The Legislature of the State of Washington finds concerning wireless telecommunications facilities that "exposures should be kept as low as reasonably achievable while still allowing the operation of these networks." [as reported in #2 at 15]

(v) The statement that EPA believes new Commission exposure limits are "adequate protection of public health" pertains to thermally related effects whose thresholds are above 4 Watts of RF power absorbed per kilogram of body weight (4 W/kg), and do not pertain to effects associated with studies below this level, e.g. *"reports suggesting potentially adverse effects (cancer) may exist"* [see EPA letter of Nov. 1993 to the Commission, and quoted by E. Hankin in October 8, 1996 letter to D. Fichtenberg]. Also, any effects documented in the Final List of Papers Reviewed For IEEE C95.1-1991 which were reported to occur below 4 W/kg would not necessarily be protected by the Commission exposure criteria [see N. Hankin letter from EPA to D. Fichtenberg of Oct. 8, 1996], and these effects include disruption of learned responses or learning of new responses, fetal anomalies, potential central nervous system damage, and cancer. References to the appropriate papers in the IEEE C95.1-1991 final list of papers should be provided [as reported in #4 at 3 through 7]

(3) A moratorium should be established for placing wireless telecommunication facilities near schools until protection limits are well determined for all mechanisms [as noted in #2 at 16 and 17].

(4) Notifying those affected should occur when submitting an application to the Commission [as noted in #2 at 16] and including schools, residences, and hospitals. It should also include businesses.

(5) Provide for independent evaluations when there is evidence of improper or incomplete evaluations by an operator. [as noted in #2 at 17]

(6) Worker safety should be provided by inclusion of special modulation provisions in the NCRP 1986 standard recommended by the EPA to which the Commission stated it would defer, and elements for an RF health and safety program which were stipulated by the Occupational Health and Safety Administration should be included in the definition of a worker being "fully informed and in control" of his exposure.[as noted in #2 at 14,15]

(7) Improve methodology for assessing whether a site may be out-of-compliance - use existing or modified databases [as noted in #2 at 15,16]. In this regard it should be noted that AT&T may be mis-informed when it stated, *"because of the lack of any central database, identifying the licensees of nearby transmitters or their operating power and frequency may be very difficult."* [AT&T page 6]. Indeed, one company contracting with the Commission, Interactive Systems, Inc. of Arlington Virginia has provided evidence that it has a data base which can provide the above services at a very modest cost; however, geographic coordinates may require revision. This company also indicated that it may be feasible to modify its software so that at any location an estimated exposure level could be provided.

In addition, the current Commission categorical exemption criteria is inadequate, and in addition to not well defining the location for which exposure is to be determined, the Commission criteria does not consider exposure to upper floors of buildings nearby to transmitters, but only exposure to ground level. Given the increase in low height antennas attached to buildings or on low roof-tops, street or traffic lights, bill-boards, etc. not considering above ground exposure to nearby buildings is a very serious flaw of the Commission's exemption criteria and must be corrected, for example as suggested in #2.

3. Support is given to the opposition comments in #3 responding to the petition for reconsideration of the Electromagnetic Energy Association and American Mobile, Inc. in which

there is opposition to further preemption of state regulations which currently remain permitted by the Telecommunications Act of 1996, including:

(1) opposition to preempting permitted state regulation of the placement, construction, and modification of **non**-personal wireless services,

(2) opposition to preempting permitted state regulation of the "operation" of RF broadcast and other telecommunications services, and

(3) opposition to preempting state tort liability law.

Since adverse effects noted above occurred below the hazard threshold upon which the Commission's exposure criteria are based, retaining such preemptions is essential to protecting the public health, and provides incentives for companies to show reasonable care and modify their operations based on the latest scientific studies. This consideration is especially relevant to this technology since the modification of RF health and safety standards may take many years; indeed, the exposure limits released August 1, 1996 were adopted by NCRP in 1986 and similar to those adopted by IRPA in 1988. Also, EPA indicated in 1986 that the Commission's exposure criteria was likely not sufficiently protective of the general population [Federal Register Vol. 51, No. 146, July 30, 1986 beginning at page 27318] and recommended criteria based on specific rates of absorption of RF power adopted by NCRP 1986. Yet, ten years passed before a change in the Commission RF standard occurred. Thus much time can pass between when scientific studies indicating the need for lower exposure and a change in standards [as noted in #3 at 22]. The existence of state tort liability law thus provides an important incentive for operators to apply the latest scientific findings to assure reasonable care is taken.

Also, by being able to regulate the "placement, construction, and modification" of non-personal wireless services, states and local jurisdictions can make use of such above scientific studies and in a timely manner modify standards for non-personal wireless service. Such modifications send important signals to the Commission and to Congress that the Commission's exposure criteria need to be re-evaluated - which is very important for the public interest.

Moreover, Congress reviewed the concerns of the telecommunications industry over the extended period during which this act was developed. Congress provided a means to address the

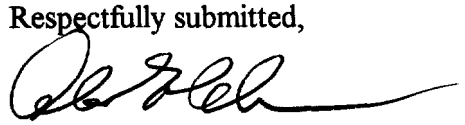
difficulties documented by the industry and considered industry concerns and balanced these with the public interest to help insure the benefits of state jurisdiction and 'states rights' of our democracy continue. Also, Congress explicitly decided to balance competing objectives and chose to not preempt non-personal wireless services from state jurisdiction - for allowing for such jurisdiction serves the public interest as noted above.

Furthermore, the final bill explicitly removed 'operation' from the House Bill HR 1555, thereby providing explicit Congressional intent that 'operation' not be preempted. Also, in Section 253 of the Telecommunications Act of 1996 Congress explicitly grants states authority to assure public safety - which includes jurisdiction to set state tort liability and share with the Commission other authority as long as complying with state law would make it impossible to also comply with Commission rules. All of the above valid and correct reasons are given in #3 above.

Finally, insofar as Congress heard and addressed industry concerns and granted relief in the Act, and since little time has elapased since such action, and for all of the above reasons to serve the public interests, it is inappropriate for industry to now seek further preemptions and such inappropriate requests should be rejected by the Commission as noted in #3.

4. Support is given to the opposition in #4 to the requests of the Department of Defense, U.S. West, and AT&T, (and also to the request of the Electromagnetic Energy Association) to apply in its entirety the Institute of Electrical and Electronic Engineer RF health standard IEEE C95.1-1991 in lieu of the Commission's selected new criteria in its R&O. This is because some adverse effects documented in papers included in the Final List of Papers Reviewed For IEEE C95.1-1991 occur at or near levels permitted by IEEE C95.1-1991, but not at those levels permitted by the Commission's standard. [as reported in #4 at 6]. Further support is given to this opposition because the U.S. Environmental Protection Agency and other health agencies have endorsed the Commission's exposure criteria as being more protective of the public health than IEEE C95.1-1991. Thus, the Commission must vigorously reject this request and likewise respond to any federal court challenge of the Commission in this regard. To do otherwise would not only comprise the public health and public interest, but would also compromise the very legitimacy of the Commission in its responsibility to act to protect the public health and public interest.

Respectfully submitted,



Alan Golden

Dated: October 15, 1996

Alan Golden
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Submitting one original and fourteen copies to the Secretary, Federal Communications Commission, 1919 M Street, N.W., Room 222, Washington D.C., 20554 and one copy to each of the parties explicitly noted in the foregoing and as listed on the following page.

Certificate of Service

I, Alan Golden, hereby certify that on this, the 16th day of October, 1996, a copy of the foregoing Replies by Alan Golden to comments on Petitions For Reconsideration were mailed first class, postage prepaid to the following:

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OCT 8 1996

OFFICE OF
AIR AND RADIATION

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Dear Mr. Fichtenberg:

Thank you for your E-mail l. tter of October 2, 1996, that asks for clarification of a statement in the letter (July 25, 1996)from Environmental Protection Agency (EPA) Administrator Carol M. Browner to Federal Communications Commission (FCC) Chairman Reed E. Hundt. You request explanation of the statement, "this new approach is consistent with our comments made in 1993 and addresses our concerns about adequate protection of public health," with questions that pertain to acute thermal exposures, long-term (chronic) nonthermal exposures, and specific absorption rate (SAR).

The aforementioned letter was a response to a Mr. Hundt's request (July 1, 1996) that EPA review the FCC's approach to developing new guidelines. The EPA discussion of the original FCC Notice of Proposed Rulemaking, "Guidelines for Evaluating the Environmental Effects of Radio frequency (RF) Radiation, ET Docket No. 93-62," resulted in recommendations to the FCC (November 9, 1993). One of those recommendations was that the FCC adopt the exposure criteria recommended by the National Council on Radiation Protection and Measurements (NCRP) in NCRP Report No. 86, "Biological Effects and Exposure Criteria for Radio frequency Electromagnetic Fields," instead of the 1992 ANSI/IEEE standard that was originally proposed.

The FCC concluded its rule-making activity in August 1996, and adopted RF radiation exposure limits that are generally based on the NCRP guidelines as was recommended by EPA. In addition the FCC specified (in the introduction to its Report and Order FCC 96-326) that the maximum permissible exposure limits adopted are based on exposure criteria quantified in terms of specific absorption rate, and that the SAR limit is 4 watts per kilogram (W/kg).

EPA was very specific in our 1993 comments regarding the sufficiency of available information (on the health effects of RF radiation) to provide a basis for developing exposure standards. In the context of those comments, the FCC's resulting rule that generally followed the NCRP guidelines, and the FCC's explicit statement that the limits adopted are based on the SAR limit of 4 W/kg, EPA believes that our concerns about adequate protection of public health were addressed by the FCC. The FCC does not claim that their new exposure guidelines provide protection for effects to which the 4W/kg SAR basis does not apply.

A key conclusion of EPA's Radio frequency Radiation Conference, April 1993 (see "Summary and Results of the April 26-27, 1993, Radio frequency Radiation Conference," Vol. 1: Analysis of Panel Discussions, EPA Report 402-R-95-009, March 1995) is that "There is sufficient information on thermal exposure/effects on which to base a standard. However, participants generally felt that more information needs to be obtained on nonthermal effects." This is reflected in EPA's November 1993 comments to the FCC. These include the following:

"While studies continue to be published describing biological responses to nonthermal ELF-modulated RF radiation, the effects information is not yet sufficient to be used as a basis for exposure criteria to protect the public against adverse human health effects."

"It is clear that the adverse effect threshold of 4 W/kg is based on acute exposures (measured in minutes or a few hours) that elevate temperature in laboratory animals including nonhuman primates, and not on long-term, low-level (non-thermal) exposure. Only a few chronic exposure studies of laboratory animals and epidemiological studies of human populations have been reported. The majority of these relatively few studies indicate no significant health effects are associated with chronic, low-level exposure to RF radiation. This conclusion is tempered by the results of a small number of reports suggesting potentially adverse health effects (cancer) may exist (...).

"The thesis that the 1992 ANSI/IEEE recommendations are protective of all mechanisms of interaction is unwarranted because the adverse effects level in the 1992 ANSI/IEEE standard is based on a thermal effect."

"While there is general, although not unanimous, agreement that the data base on low-level, long-term is insufficient to provide a basis for standards development, some contemporary guidelines state explicitly that their adverse-effect level is based on an increase in body temperature (NRPB 1993). Furthermore they do not claim that the exposure limits protect against both thermal and nonthermal effects."

With this background established, I will proceed to provide my responses to your other questions.

Q. Is it correct to conclude that the "adequate protection of public health" noted above, refers to "protecting against thermally related effects in humans?"

A. As I have previously noted, while there is sufficient information on thermal exposure/effects on which to base a standard, the data base on low-level, long-term exposure is insufficient to provide a basis for standards to protect the public against adverse human health effects that may result from long-term, nonthermal exposures. Both the NCRP and ANSI/IEEE standards are thermally based, and do not apply to chronic, nonthermal exposure situations. The statement referring to "adequate protection" pertains to thermally related effects.

Q. Is it still correct that adverse effect level of 4 W/kg is based on acute exposures that elevate temperature in laboratory animals including nonhuman primates, and not on long-term, low-level (non-thermal) exposure.

A. Yes

Q. Is it correct that the "adequate protection" EPA refers to in its July 25, 1996 letter pertains to protection provided for the effects which occurred due acute exposures, and not necessarily to effects reported to occur below the 4W/kg threshold level?

A. We are referring to exposures that are acute, thermal exposures, not non-thermal, chronic exposures. The SAR limit to which the whole-body exposure limits for the public are related is 0.08 W/kg due to the use of a factor of 50 uncertainty factor applied to the 4 W/kg basis.

Q. Is it correct that "adequate protection" of public health pertains to thermally related health effects, and not necessarily to the nonthermal effects noted in the 1993 EPA letter?

A. Yes

Q. In view of 1993 comments, does adequate protection pertain to microwave hearing?

A. In that the 'microwave hearing effect' has not been established as a health effect, our statement with regard to "adequate protection" would not pertain to microwave hearing.

I hope that this information has been helpful and responsive to your inquiry. Please contact me if I can be of further assistance.

Sincerely,

Norbert N. Hankin

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MINISTRY OF EDUCATION Te Tāhuhu o te Mātauranga
PROPERTY MANAGEMENT

21 March 1996

Cell phone Transmitters on School Sites - Policy Statement

From 1992 it has been possible for Boards of Trustees to enter into agreements with Telecom for the establishment of cell phone transmitters on schools sites. The decision to install a transmitter on a school site was left entirely at the boards discretion.

In December 1994 concerns were expressed by some members of the general public and some boards of trustees and parents about the safety of cell phone transmitters on school sites.

The National Radiation Laboratory expressed the view that:

- Cell phone transmitters operate well within the New Zealand Standard 6609 for UHF and microwave electromagnetic radiation levels.
- With few exceptions, nearby residents of cell phone base stations are exposed to levels less than 1% of the general public exposure limit set out in the New Zealand Standard 6609.
- There is no conclusive evidence that short or long term exposures at these low levels are harmful.

However of paramount importance to the Ministry is the provision of an environment where boards of trustees, parents, teachers and pupils and other occupants of the school site can feel comfortable. For this reason the Ministry has decided cellphone transmitters will not be sited on Crown owned school sites in the future.

John Simpson
National Property Manager

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